



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,905	07/03/2003	Yoshitaka Ichii	238370US90DIV	3616
22850	7590	05/03/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			SCHEUERMANN, DAVID W	
		ART UNIT	PAPER NUMBER	
		2834		
DATE MAILED: 05/03/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/611,905	ICHII ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David W. Scheuermann	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 February 2004.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 12-21 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 12-21 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. 09/881,693.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### ***Response to Arguments***

Applicant's arguments filed February 23, 2004 have been fully considered but they are not persuasive. Wing does in fact teach that the massage apparatus vibrates at resonance or near to a resonance with the standing waves set up in the body material. Wing specifically recites in column 4 lines 17-35 that the spring constant of spring 30 is chosen to minimal interference with the electromagnetic forces applied by the solenoid coils. That would occur only when moving part 13 operates at or near the frequency of the amplitude control spindle. Furthermore, in column 4 lines 21-39, Wing teaches timing the impacts so as to reinforce each other and thus induce a state of resonance in the body material. Thus to meet the conditions of minimal interference with the electromagnetic forces applied by coils 31 and 32, spring 30 is adjusted to enable resonance in the body material, which implies the amplitude control spindle vibrates at or near to the resonance or the body material which further implies that moving part 13 which supplies energy to the amplitude control spindle also vibrates at or near the resonance material of amplitude control spindle. Since the Wing reference teaches the resonance feature recited in claim 12, the rejection is maintained.

As to D'Ewart, note in column 3 lines 3-7 and equations 8(a) to 8(c) that the end masses are given "natural frequencies essentially identical to the frequency of the power source. Natural frequency is equivalent to resonant frequency. Further, note in the paragraph-bridging column 14 and 15 that the motor in figure 19 can be operated

according to equation 8c. Equation 8c is derived by setting  $w_3 = w_2 = w$ , for the short stroke high out configuration. Where  $w$  is the frequency of the AC source,  $w_2$  is the frequency of mass  $M_2$  and  $w_3$  is the frequency of mass  $M_3$ . These masses lie on opposite ends of the motor, and hence operate at essentially identical resonant frequencies. Therefore the D'Ewart reference also teaches the resonance feature and this rejection is maintained.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Wing, US 4549535. Wing shows:

A linear oscillator, comprising:

a reciprocatable moving part 13;

a case (10 and 28) containing the moving part;

an amplitude control spindle 14 moveably supported in the case;

an electromagnetic driving part (coil 31 and 32) housed in the case for reciprocating the moving part;

and

a spring member 30 disposed at least between the case and the moving part and between

the case and the amplitude control spindle (spring 26) to form a spring oscillation system,

wherein the moving part and the amplitude control spindle reciprocate at or near to a resonance frequency of the linear oscillator.

Re claim 14 note the mass of the amplitude control spindle including the connecting element of the body material is larger than moving part 13 and either 11 or 15.

As to claim 15 note in column 2, lines 39-46 that opposite phasing is enabled by two separate solenoid coils.

Re claims 16 note shaft portions 11 and 15 made of nonmagnetic material, see column 2, lines 27-29.

As to claims 19 and 20, note that spring 30 limits axial revolution.

Finally, as to claim 21 note that the outside diameter of spindle 24 lies sufficiently close to the mating surfaces in housing 10 to prevent rocking.

Claims 12-21 are rejected under 35 U.S.C. 102(b) as being anticipated by D'Ewart, Jr. US 3525887. D'Ewart, Jr. shows a linear oscillator (note figure 19) comprising:

A linear oscillator, comprising:

a reciprocatable moving part 308;

a case (284) containing the moving part;

an amplitude control spindle (any of 262 and 264) moveably supported in the case;

an electromagnetic driving part (coil 277 and 279) housed in the case for reciprocating the moving part;

and

a spring member disposed at least between the case and the moving part (any of 282 or 278) and between

the case and the amplitude control spindle (any of springs 270, 282 or 278) to form a spring oscillation system,

wherein the moving part and the amplitude control spindle reciprocate at or near to a resonance frequency of the linear oscillator.

Note in the paragraph-bridging column 14 and 15 that the motor in figure 19 can be operated according to equation 8c. Equation 8c is derived by setting  $w_3 = w_2 = w$ , for the short stroke high out configuration. Where  $w$  is the frequency of the AC source,  $w_2$  is the frequency of mass  $M_2$  and  $w_3$  is the frequency of mass  $M_3$ . These masses lie on opposite ends of the motor.

Re claim 14, note that the mass of the magnet end mass is four times as large as the power output end mass as described in column 13, lines 50-53.

As to claim 15, note that the upper mass comprising 264 and 262 reciprocates in opposite phase of moving part 308.

Re claims 16-18, note output connection shaft 272 or non-magnet shafts 266 and 268.

As to claims 19 and 20, note spring sockets on the ends of all springs, which restrict axial rotation.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Keller et al. teach tuning a spring mass tool to the natural frequency of the human spine to maximize the dynamic output response while minimizing the impact force.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is (571) 272-2035. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

dws  
April 26, 2004

  
**THANH LAM**  
**PRIMARY EXAMINER**